

REMARKS

Claims 1-19 remain in the case and new Claim 20 has been added. New Claim 20 is similar to, but narrower, than Claim 3. Favorable reconsideration of the above-identified application in view of the foregoing amendments and following remarks is respectfully requested.

General Claim Amendments:

Claims 1-7 are herein amended to add “and stopping” to the preambles for clarity. This addition does not further limit the claims but merely conforms to the limitation previously contained in the body of Claims 3-7.

Allowed Subject Matter:**Claims 4-7:**

Claims 4-7 were objected as being dependent upon rejected base claim 1 and rejected intervening Claim 3. Moreover, Claim 3 is rejected under §112 as allegedly not providing enablement for shutting down the engine before determining whether three conditions exist. Accordingly, Claim 4 is currently amended to an independent claim including all the limitations of Claim 1 and enhanced Claim 3 (see remarks for §112 rejection of Claim 3 below). Claims 4-7 are now believed to be in a condition for allowance.

Claim 13:

Claim 13 was objected as being dependent upon rejected base Claim 8 and rejected intervening Claim 9. Accordingly, Claim 13 is herein amended to an independent claim including all the limitations of base Claim 8 and intervening Claim 9. Claim 13 is now believed to be in a condition for allowance.

Claims 14-17:

Claims 14-17 were objected as being dependent upon rejected base Claim 8. Accordingly, Claim 14 is herein amended to an independent claim including all the

limitations of base Claim 8. Claims 14-17 are now believed to be in a condition for allowance.

In the Specification:

The paragraph numbered as 26 on page 8, is currently amended to correct a typographical error changing an identifying numeral "74" to "78."

Claim Rejections - 35 USC §112:

Claim 3 is rejected under 35 USC §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicant regards as the invention because the claim allegedly does not reasonably provide enablement for shutting down the engine before determining whether three conditions exist. Applicant respectfully traverses the rejection, but amends Claim 3 without prejudice to provide clarification.

Dependent Claim 3 as originally written completes the loop of starting and stopping an engine (along with an additional limitation of confirming that the engine is at idling speed). In-other-words, the engine must be running in order to stop it, and, the engine can not be running in order to start it. The antecedent "three conditions" referred to in dependent Claim 3 are found in base Claim 1, they are:

- 1) a voltage of a battery is below a predetermined limit,
- 2) a temperature of the engine is below a predetermined limit,
- 3) a temperature of a cab of the vehicle is outside of a predetermined temperature range.

It appears that instead of referring to the above three conditions found in base Claim 1, the Examiner incorrectly refers to other conditions required for a different scenario in the specification not claimed in Claim 3. Applicant notes, however, that the term "the" or "said" was inadvertently omitted before introduction of the three conditions in Claim 3 possibly leading to the confusion.

Claims 1 and 3 are amended to itemize the individual method steps, thus better clarifying what steps occur and in what order. Moreover, the phrase, "immediately before the step of determining whether three conditions exist" is deleted from Claim 3

because with the itemization or cross-referencing of the steps, it is no longer needed and appears to cause confusion.

In regards to currently amended Method Claim 3, how the engine is actually automatically shutdown could be a potential step between steps (e) and (f), however, and although there are many methods commonly known in the art, this particular "how" is not meant to be a limitation of Claim 3.

Consequently amended Claim 3 is definite under 35 USC §112, second paragraph, by providing certain conditions that must exist before an engine is automatically shut down.

Claim Rejections - 35 USC §103 (Hanson & Goertler):

Claims 1-3 are rejected under 35 U.S.C. §103(a) as being unpatentable over Hanson, U.S. Patent 5,317,998 in view of Goertler, U.S. Patent 4,520,271. Applicant respectfully traverses the rejection.

Claim 1:

The first four, 4, clauses found in Hanson '998 and referred to in the USPTO first office action on page 4 all refer to conditions required in order to initiate an automatic shutdown, not the automatic start-up in Claim 1 of the present application. For instance, column 10, lines 27-33, of Hanson '998 sets an engine overheat flag that could cause the engine to shutdown. This is opposite that of Claim 1 that checks for reasons to start the engine such as low engine temperature. Similarly:

a) column 6, lines 11-43 of Hanson cause an engine shutdown, not start-up if cap temperature is within a specified range; and

b) column 12, lines 21-30 of Hanson cause an engine shutdown if an "alternator" voltage level is too high, this does not teach the limitation of Claim 1 that causes an automatic start-up if a "battery" voltage is too low.

At best, Hanson '998 discloses some safety features regarding the hood, the brakes and the transmission to provide a go/no-go determination. However, the Hanson '998 reference does not teach the start-up enabler of low battery voltage, out of range cab temperature, and low engine temperature (wherein any one condition will cause automatic engine start-up) of the present application. The addition of the Goertler '271 reference does

not alleviate the above noted deficiencies of the Hanson disclosure. As such, Claim 1 is non-obvious and patentable over Hanson '998 in view of Goertler '271.

Claims 2 and 3:

Because base Claim 1 is patentable, dependent Claims 2 and 3 are non-obvious and patentable. If an independent claim is non-obvious under 35 U.S.C. §103, then any claim depending therefrom is non-obvious, In re Fine, 837 F.2d 1071, 5USPQ2d 1596 (Fed. Cir. 1988).

Claim Rejections - 35 USC §103 (Sutton & Kippe):

Claims 8-10 and 12 are rejected under 35 U.S.C. §103(a) as being unpatentable over Sutton, U.S. Patent 5,072,703, in view of Kippe, U.S. Patent 6,588,449.

Claim 8:

Because Sutton '703 does not include the limitation of a fuel level switch found in originally filed Claim 8, the Kippe '449 reference that does have such a switch was combined with Sutton '703 toward an obviousness rejection. Applicant respectfully contends that although there is now motivation to make such a combination, such motivation is hindsight. In fact, neither the Sutton '703 reference or the Kippe '449 reference teach or suggest the desire to make such a combination.

Regardless, base Claim 8 is herein amended without prejudice to positively claim the starter relay (83) as part of the engine control system (10) and an ECM output (87) that electrically prevents closure of the relay thereby preventing automatic starting of the engine. No new matter has been added to the application, and the additional limitation of Claim 8 is supported in Figure 3 and Paragraphs 7 and 26.

At best, Sutton '703 discloses the limitations outlined by the First Office Action, and Kippe '449 discloses a fuel level sensor (70) that communicates electrically with an EEC that electrically actuates a solenoid (51) for closing a fuel valve (52) that in-turn shuts the engine down via fuel starvation (see col. 5, lines 9-21). Neither references teach the fuel switch (49) of Claim 8 communicating electrically with the ECM (62) that in-turn actuates a starter relay (83) required for starting the engine. In-other words, generally Kippe

'449 teaches shutting down an engine via fuel starvation based on tank fuel level, and amended Claim 8 of the present invention claims the prevention of starting an engine based on tank fuel level.

Because the references do not teach or suggest, individually or in combination, a fuel level switch (49) providing an input (78) to the ECM (62) that in-turn provides an output (87) to a starter relay (83) of the present application, amended Claim 8 is non-obvious and patentable over Sutton '703 in view of Kippe '449.

Claims 9-10 and 12:

Because base Claim 8 is patentable, dependent Claims 9-10 and 12 are non-obvious and patentable. If an independent claim is non-obvious under 35 U.S.C. §103, then any claim depending therefrom is non-obvious, In re Fine, 837 F.2d 1071, 5USPQ2d 1596 (Fed. Cir. 1988).

Claim Rejections - 35 USC §103 (Sutton, Kippe & Brandwein):

Claim 11:

Claim 11 is rejected under 35 U.S.C. §103(a) as being unpatentable over Sutton, U.S. Patent 5,072,703, in view of Kippe, U.S. Patent 6,588,449, and in further view of Brandwein, U.S. Patent 3,906,437.

Because base Claim 8 is patentable, dependent Claim 11 is non-obvious and patentable. If an independent claim is non-obvious under 35 U.S.C. §103, then any claim depending therefrom is non-obvious, In re Fine, 837 F.2d 1071, 5USPQ2d 1596 (Fed. Cir. 1988). The addition of the Brandwein '437 reference does not alleviate the deficiencies noted above with the combination of the Sutton '703 and Kippe '449 references.

Claim Rejections - 35 USC §103 (Hanson & Kippe):

Claims 18 and 19:

Claims 18 and 19 are rejected under 35 U.S.C. §103(a) as being unpatentable over Hanson, U.S. Patent 5,317,998 in view of Kippe, U.S. Patent 6,588,449.

Base Claims 18 and 19 are amended without prejudice to positively claim the starter relay (83) as part of the engine control system (10) and an ECM output (87) that electrically prevents closure of the relay thereby preventing automatic starting of the engine.

No new matter has been added to the application, and the additional limitation of Claims 18 and 19 are supported in Figure 3 and Paragraphs 7 and 26.

At best, Sutton '703 discloses the limitations outlined by the First Office Action, and Kippe '449 discloses a fuel level sensor (70) that communicates electrically with an EEC that electrically actuates a solenoid (51) for closing a fuel valve (52) that in-turn shuts the engine down via fuel starvation (see col. 5, lines 9-21). Neither references teach the fuel switch (49) of Claim 8 communicating electrically with the ECM (62) that in-turn actuates a starter relay (83) required for starting the engine. In-other words, generally Kippe '449 teaches shutting down an engine via fuel starvation based on tank fuel level, and amended Claim 8 of the present invention claims the prevention of starting an engine based on tank fuel level.

Because the references do not teach or suggest, individually or in combination, a fuel level switch (49) providing an input (78) to the ECM (62) that in-turn provides an output (87) to a starter relay (83) of the present application, amended Claims 18 and 19 are non-obvious and patentable over Hanson '998 in view of Kippe '449.

Drawing Changes:

Applicant submits replacement drawings for amend Figure 3 adding an open switch (52) in series with ignition switch (50) and as supported by the Paragraph 23 of the Specification.

Applicant further notes that reference number "74" has been corrected in the specification, hence, a drawing change is not required.

Relative to the starter motor (85), Applicant notes that the starter relay (83) is shown in Figure 3 and the starter motor (85) is in Figure 1. Regardless, Applicant herein submits a change that amends Figure 3 to include motor (85).

New Claim:

New Claim 20 has been added and includes the additional limitation of confirming the vehicle is not moving and an engine temperature is above a pre-determined temperature before shutting the engine down.

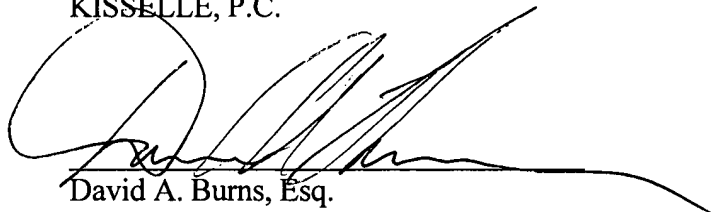
Summary:

Please reconsider and allow Claims 1-19 and new Claim 20 in view of the above amendments and remarks. Also approve and enter the attached replacement sheet(s) for amended Figure 3.

A check in the amount of \$600 is submitted to cover the fee for independent claims. Moreover, the Commissioner is hereby authorized to charge any deficiencies, or credit any overpayment associated with this communication to Deposit Account No. 50-0852

Respectfully submitted,

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Enclosure